TCEP

Tobacco Control Enhancement Project

Increasing Smoking Cessation: Overview and Scientific Evidence

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One primary goal of Healthy People 2010 is to reduce the prevalence of smoking by 15%.[1,2] Strategies for achieving this goal include increasing the average smoking initiation age, decreasing smoking uptake by youth, decreasing tobacco advertisements and promotional items that influence youth uptake, and increasing quit attempts and success rates for both adults and youth. Increasing smoking cessation requires that present smokers quit. According to data collected by the Center for Disease Control and Prevention in 1998 and 1999, 41% of adult smokers and 76% of youth smokers (grades 9th through 12th) attempted to stop smoking for one day or longer.[2] Since so many regular smokers actively attempt to quit, additional emphasis has been placed on the treatment of nicotine dependence. While treatment is often described in terms of individual level interventions, cessation can also be increased through population-based interventions. The current paper will provide a general overview of individual and population-based cessation strategies, present research on each method's effectiveness, and focus on certain groups that have been specifically targeted by the tobacco industry within the past couple of decades. While these efforts will be presented separately in this paper, research indicates more comprehensive approaches using both individual and population-based efforts simultaneously are the most effective at increasing successful long-term cessation.[3,4]

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Individual Level Strategies

An interest in health behavior change at the individual level has guided the development of successful treatment interventions. This is especially true when considering tobacco use and cessation. Examining individual predictors of successful quitting may help to shed light on the relationship between group characteristics and cessation rates. For example, risk perceptions of the individual may play an important role when considering the formation and reinforcement of group norms regarding smoking. Below are a number of individual level cessation strategies that are among those most used.

Self-help manuals and other educational information concerning treatment can be distributed to a wide variety of individuals, making this method one of the easiest to accomplish and among the most cost-effective.[5] However, Curry and Major (2000) reported that when self-help materials were used alone they did not appear to be an effective quitting or reduction aid when compared with other methods.[6] These materials tend to target broad groups and use less specific messages, two characteristics that have shown less of an effect on cessation rates when compared with more individually-tailored interventions. While self-help materials used alone might not be advantageous, when complemented with other treatment methods such as advice or counseling, quit rates increase.[6] In one study of adult smokers who had made a quit attempt in the last 12 months, approximately 2.5% reported using self-help materials whereas approximately 9.3% reported using self-help materials coupled with another type of cessation method (e.g., counseling, nicotine patch or gum).[6]

Counseling and advice programs are typically one-to-one sessions conducted in person or conducted over the phone. These programs are beneficial for individuals seeking more tailored treatment services that meet the individual's unique barriers and strengths.[7] Given their ability to offer both intratreatment support (e.g., from a clinician) as well as extratreatment support (e.g., from group members), individual and group counseling cessation programs have been shown to be much more effective when compared to interventions that lack a social support component.[5] Telephone quitlines have several advantages over in-person counseling programs, especially in reducing barriers associated with in-person participation (e.g., transportation, waiting for new classes to start, finding a convenient time). Reactive programs (when the smoker initiates contact) tend to have higher drop out rates than proactive methods (when the counselor contacts the smoker systematically). In one study, an initially reactive counseling program was altered to become more proactive, resulting in a drop in attrition rates from 65 to 25% as well as a significant increase in quit rates.[7] In general, counseling and advice programs have shown stronger, more positive effects when they are of increased duration and intensity (i.e. more components).[1,7] For example, Zhu (2000) reported increased success rates of 14.7%, 19.8%, and 26.7% at 12 months for self-help, single session, and multiple session telephone counseling programs using proactive methods.[7]

Pharmacological treatments, such as Nicotine Replacement Therapies (NRTs; e.g., gum, patch, or inhaler) and other over-the-counter or prescribed medications have demonstrated efficacy in their ability to aid in successful cessation.[8] The use of NRTs has also been shown to delay weight gain, a common barrier to quitting, especially among women who smoke. More recently, bupropion has been added to these first-line treatment aids, showing almost twice the quit rates when compared to those using the nicotine patch or a placebo (30.3% compared to 16.4% and 15.9%, respectively).[9] In addition, there are also two second-line medications, clonidine and nortriptyline, that are used in special circumstances and are not FDA approved.[10]

Brief healthcare provider interventions, which may include the healthcare provider advising the patient on the dangers of smoking or the health benefits from quitting smoking, have also been shown to increase cessation rates by about 5-10% a year. When coupled with other cessation methods (e.g., patch, gum, or counseling), quit rates can increase 20 to 25% in one year.[10] Evidence suggests that while brief interventions can increase quit attempts in the short-term, they may have little effect on long-term cessation success.[3]

While each of these methods show evidence of increased quit attempts, they are more effective when used in combination (e.g., self-help manuals complemented with a counseling program), thereby further increasing the likelihood of long-term successful cessation.

Population-based Strategies

Population-based strategies have a demonstrated ability to affect cessation rates. These initiatives are often large-scale programs that are aimed at increasing public awareness about the dangers of tobacco use and instituting tobacco control policies. These methods are also instrumental in advancing the course of statewide tobacco control movements.

Governmental and public health policy initiatives have been influential in decreasing environmental tobacco smoke in public places by introducing smoking bans and restrictions. For instance, workplace bans have been associated with increased cessation attempts and increased reduction.[11] Research evidence suggests that the number of workers protected by smoking bans has increased from 6% in 1986 to 64% in 1996.[3] In addition to the workplace, smoking bans and restrictions have also been placed on restaurants, schools, and childcare centers around the country.

Raising tobacco taxes by 20% has been linked to an additional 222,000 quit attempts, with studies showing that long-term cessation rates increase and decrease according to similar increases and decreases in tobacco product prices.[4, 12] Other research evidence supports this finding, reporting that for each 10% increase in the price of cigarettes, a 4% decline in consumption results.[3]

Mass media campaigns, such as those first instituted in Massachusetts and California, have been shown to be a cost-effective method aimed at increasing public awareness about the dangers of tobacco, changing smoking behavior, as well as influencing social norms and negative attitudes about tobacco use. Research evidence from California suggests that 6.7% of uncued and 34.3% of cued smokers named anti-tobacco advertising as influencing their decision to quit.[13] Although it is impossible to evaluate the unique contribution of mass media campaigns, higher cessation rates result when they are combined with local community-based programs.[13] However, Zhu reports that over six years, about half of all the calls to the California Smokers' Helpline were a result of media campaigns advertising the quitline number.[7]

Statewide tobacco control initiatives have been instituted in a number of states, including California, Massachusetts, Arizona, Oregon, and Florida.[1] These initiatives, funded primarily by tobacco settlements and taxes, have given tobacco control advocates increased confidence in their ability to further impact tobacco use. This ability to impact tobacco use is especially important since the decline in prevalence rates among adults has generally plateaued (showing lesser decline) since 1990.[1,9] Burns (2000, p. 21) states, "if tobacco control programs were implemented nationally, rates of successful (long-term) cessation might be increased by one third."[3]

In summary, both individual and population-based cessation strategies have been shown to affect cessation rates. Population-based tobacco control efforts have generally found that single interventions or programs will most likely not have a large impact on cessation. Instead, using comprehensive approaches that include both individual and population-based intervention strategies (e.g., health education, offering financial incentives to smokers, pharmacological aids, media advocacy, national campaigns, healthcare provider assistance, and governmental initiatives) have been shown to be most effective.[5] According to Bitton, Fichtenberg, and Glantz (2001), statewide cessation programs using a comprehensive tobacco control program have led to declines in smoking prevalence within their communities. These states report lower prevalence rates (1% decline) over time as compared to other states that do not have a comprehensive tobacco control program (.3% decline).[1]

Cessation Interventions for Target Populations

Over the past few decades, the tobacco industry has been accused of targeting certain groups of individuals, such as youth, minorities, and females.[13,14] In response, specialized cessation strategies at both the individual and population-based levels have been developed to meet the specific needs and concerns of these groups.

Youth Interventions

Since youth typically report taking up smoking by 18 years of age, the Center for Disease Control and Prevention and other organizations have concentrated their efforts on developing school-based prevention programs aimed at reducing uptake.[15] Studies on youth cessation and treatment strategies have reported that adolescents are typically difficult to recruit and retain in formal programs and also report lower success rates than adults.[16] Media-based strategies, which include countermarketing strategies, have been shown to increase negative attitudes towards the tobacco industry, which might be instrumental in increasing cessation attempts.[14] An important factor in smoking cessation and reduction among youth is the cost of tobacco products, especially among premium brands.[12, 17] Studies have shown that as tobacco prices increase, prevalence rates among youth tend to decrease.[12, 17] For a more in-depth discussion of youth tobacco use, please see the briefing paper entitled, "Decreasing youth initiation of smoking: Overview and scientific evidence."

Minority Interventions

One of the major objectives from the Healthy People 2010 initiative is to reduce the population-based discrepancies in health disparities, including those associated with tobacco use, cessation, and tobacco-related illnesses. Factors that influence and sustain cessation among members of different racial/ethnic groups have been examined. Within the United States, factors such as culture, degree of acculturation, and socioeconomic factors are thought to heavily influence population-based health-related outcomes.[14, 18] Similarly, there are different patterns of tobacco use across ethnic groups, where members of some minority groups report smoking less than

other ethnic groups. Some studies have shown a positive relationship between acculturation and smoking prevalence among minority groups, whereas with other groups, an inverse relationship has been found.[14, 18] These factors are especially important when considering cessation in that individual treatment and population-based initiatives targeting minority populations must be culturally appropriate, accessible linguistically, and sensitive to the common norms and values of the target group. Self-help cessation approaches may not be as successful with minorities as compared to whites.[14] The combination of the lack of utilization of healthcare services by minority groups and a lack of training for healthcare providers regarding cultural sensitivity may result in logistical problems for interventions using healthcare providers.[14] For a more in-depth discussion of health disparities related to tobacco use among populations, please see the briefing paper entitled, "Tobacco and health disparities: Overview and scientific evidence."

Women's Interventions

According to the 2001 Surgeon General's Report on Women and Smoking, 75.2 percent of women smokers reported wanting to quit and 46.6 percent reported attempting to quit smoking.[19] Despite the fact that fewer women use tobacco as compared to men, there is evidence that they are more likely to relapse and more likely to fear weight gain after quitting smoking. Cessation and treatment methods directed towards women have tended to emphasize the effects of their smoking status on their children and family member's health, weight gain, depression, and social support. While psychosocial factors appear to be much more associated with successful long-term cessation, research has also indicated there may be hormonal factors in influencing cessation success among women. Research examining the relationship between nicotine craving and the menstrual cycle has yielded mixed results, although more consistent evidence may support a link between withdrawal symptoms and hormonal factors.[19]

Conclusions

Increased cessation and the treatment of tobacco addiction and use is one of the major goals of Healthy People 2010. Many national surveys have shown that a large number of smokers want to quit and have attempted to do so in the past. Individual and population-based cessation strategies exist in a variety of forms, with varying rates of success among different groups of individuals. Whereas the former is concerned primarily with individual health behavior change and psychosocial predictors related to successful cessation, the latter focuses on creating more pervasive strategies reaching a much larger audience and can potentially lead to statewide tobacco control initiatives. Research indicates that utilizing both individual and population-based strategies concurrently result in higher rates of success suggesting that more comprehensive approaches, as compared to single interventions at either level, are particularly useful and recommended. Finally, the tobacco industry has been accused in recent decades of targeting specific groups of individuals, namely young adults, minorities, and women. Research indicates that these very same groups are among those that are most negatively affected by tobacco health-related illnesses, making the need for specifically tailored interventions even more important. In conclusion, comprehensive approaches, including both individual and population-based strategies are essential in aiding smokers, especially those in targeted groups, in the treatment of tobacco addiction as well as successful long-term cessation.

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